



BSc (Hons) Applied Animal Science (with placement)

UCAS code	D301
Institution code	H12
Duration	4 years (full-time) including a one-year work placement. A three year programme is available for applicants with at least two years, full-time relevant work experience.
Start date	September 2027
Location	Harper Adams University campus (and location of work placement)

If you have an interest in animal biology and how we can apply scientific principles to make our interactions with animals more sustainable and welfare-friendly, then this is the course for you.

What will this degree entail?

The Applied Animal Science degree provides comprehensive knowledge of animal biology across a wide range of species and teaches you how to apply this understanding to the evidence-based management of animals under human care.

This course will blend theoretical knowledge with a range of practical and laboratory-based skills.

You will study key areas including animal physiology, animal nutrition, animal genetics, animal behaviour, animal welfare assessment, and animal husbandry and management. Alongside these scientific foundations, the degree also explores global perspectives on how societies interact with animals and introduces essential business management skills relevant to careers in animal-related industries

A distinctive feature of this applied animal science degree is the opportunity to tailor your learning to your own interests. In both your second and final year, you will choose a species of your choice for assessments in two specialist modules, allowing you to deepen your expertise in a particular area of animal management. Your Honours Research Project can also focus on your preferred species, enabling you to build specialist knowledge that supports your future career goals

As with all Harper Adams University degrees, a key component of the course is the industry placement year. This provides invaluable experience within the animal science, animal welfare, agriculture, zoological, or wider animal management sectors, helping you apply your learning in real-world settings, expand your professional network, and refine your career ambitions. In your final year, you will build on this experience through advanced modules and a specialist research project that showcases your applied scientific skills.

A-level entry requirements

- **Entry requirements for 2027 entry are not currently available. Please contact Admissions for advice**

Graduates from the applied animal science degree progress into a wide range of careers across the animal, agriculture, welfare and research sectors. Roles include animal welfare officers, livestock and farm managers, zoo and wildlife roles, animal nutrition specialists, laboratory and research technicians, and positions within animal charities, government agencies, and animal-related industries. Graduates might also

move into science communication, education, or policy roles supporting evidence-based animal management. The industry placement year provides essential experience, helping students secure roles and build strong professional networks.

What will I study?

Year 1	Year 2	Year 3	Year 4
Animal Biology (A4001HF) 20	Applied Nutrition (A5031HF) 20	Placement year	Dissertation (HF) 40
Animal Husbandry and Management (A4002HF) 20	Physiology of Body Systems (A5004HF) 20		Evidence Based Sustainable Practice (HF) 20
Animal Health (A4003HF) 20	Behaviour and Welfare Science (A5032HF) 20		Global Challenges in Animal Industries (HF) 20
Evolution, Genetics and Behaviour (A4004HF) 20	Applied Animal Health and Disease (HF) 20		Contemporary Animal Business Project (HF) 20
Skills for the Animal Scientist (A4006HF) 10	Animal Breeding, Ethics and Genetics 20		Current Trends in Animal Sciences (HF) 20
Introduction to Animal Welfare and Ethics (A4005HF) 20	Professional Development for Animal Careers (A5023HF) 10		
Business in Animal Industries (A4007HF) 10	Electives		
	One Health (A5022HF) 10		

Animal Biology

Year of study 1
Code A4001HF
Credits 20
Core/option Core
Module contact [Jane Thomas](#)

Underpinning knowledge and understanding of how the animals are organised, acquire nutrition and energy is an important aspect in studying animal-related courses and this module provides an introduction to the structure and function of animals. Within this module, you will learn the structure and organisation of biomolecules, cells, and tissues in forming complex organ systems in a range of animal groups. You will take a comparative and practical approach for learning, by observing and analysing the details relating to animals, within specialist learning environments.

Knowing organisation and unique characteristics of the animals that are around us then helps you to appreciate how they function effectively within their natural environment or production systems, giving you a broader foundation to explore further detail during your degree programme.

Animal Husbandry and Management

Year of study 1
Code A4002HF
Credits 20
Core/option Core
Module contact [Jane Thomas](#)

It is important when studying animal-based courses that you have an understanding of animal management practices involved with a variety of systems and settings. This module will place emphasis on environmental requirements, nutritional needs, and species suitability where you will cover livestock, companion animals, exotic, aquaculture and equine species.

This module provides theoretical knowledge and practical animal husbandry opportunities required for safe human and animal interactions. This module provides a strong foundation to prepare you for future course-specific content.

Animal Health

Year of study 1
Code A4003HF
Credits 20
Core/option Core
Module contact [Jane Thomas](#)

This module enables you to explore how the body stays healthy in the face of disease challenges and explore causes of disease. The immune system faces challenges from pathogens on a daily basis. You will explore how the body deals with these challenges and what forms they can take. This knowledge is essential for anyone working with animals in order to maintain the health and welfare of animals in their care. Laboratory skills will be developed by working collaboratively, collecting data and interpreting results.

Evolution, Genetics and Behaviour

Year of study 1
Code A4004HF
Credits 20
Core/option Core
Module contact [Jane Thomas](#)

This module provides a broad overview of how the process of evolution through Darwinian natural selection has resulted in the diversity of life seen on Earth. The microevolutionary and speciation mechanisms underpinning evolution are explored, including the role of DNA, mechanisms of inheritance, coevolution and symbiosis. The classification of living organisms and the diversity of the animal kingdom are reviewed. The factors that led humans to domesticate plants and animals are considered, including the impacts of domestication on animal behaviour. The module is designed to give you a deeper understanding of evolution and its role in animal behaviour development.

Skills for the Animal Scientist

Year of study 1
Code A4006HF
Credits 10
Core/option Core
Module contact [Jane Thomas](#)

Within this module, you will acquire essential academic skills that can be applied to higher education and careers within the animal sciences. The module supports learning across other modules within the degree programme and allows time to develop competency within and beyond technically orientated learning. You will develop an awareness of personal and academic development to facilitate growth and development in the disciplines. You will explore the analysis and presentation of scientific data to support effective communication and collaboration with the scientific community.

Introduction to Animal Welfare and Ethics

Year of study 1
Code A4005HF
Credits 20
Core/option Core
Module contact [Jane Thomas](#)

This module provides an introduction to a range of industries which involve animals and the implications of those industries within a variety of settings on a national and an international scale. It will consider the ethics of societies' usage of different types of animals and the role of legislation and different organisations in the promotion of the interests of animals. Examples will be drawn from a range of diverse species and scenarios to illustrate the principles and practices discussed. The main ethical theories that are useful when exploring these issues are discussed and explained. Examples of how these theories can be applied to our interactions with animals are discussed.

During the module you will also be introduced to the concept of animal welfare, legislation within industries and welfare implications for animals. The content of this module will be of benefit to anyone considering working either directly or indirectly with animals in a range of environments. This module will equip you with underpinning knowledge which will support you throughout your degree in second and final year modules and ongoing interactions with animals.

Business in Animal Industries

Year of study 1
Code A4007HF
Credits 10
Core/option Core
Module contact [Jane Thomas](#)

An increasing proportion of people are involved with animals either socially or professionally. The business of animals is a growing part of the economy, one that has proved resilient when other business sectors falter. This module introduces the context for operating a business in animal-oriented companies. Differing business structures and operating models are explored, with a focus on the requirements for businesses to operate legally and sustainably.

You will be required to work collaboratively to evaluate real-world company approaches by researching why people and businesses are so invested in animals. You will learn to use digital tools and techniques to communicate effectively with a range of audiences from the general public to senior business managers. These competencies will be valuable for future projects.

Applied Nutrition

Year of study 2
Code A5031HF
Credits 20
Core/option Core
Module contact [Jane Thomas](#)

An understanding of factors affecting dietary nutrient supply and animal nutrient requirements is essential for the design of feeding strategies to optimise health, feed utilisation, and animal welfare. In this module, you will examine the chemical components of animal feeds and develop an understanding of how the chemical composition of feeds contributes to the supply in all animal species. It will cover animal nutrient requirements and assessment together with macro and micronutrient supply and metabolism. Evaluation of dietary supply for animals in captivity will be compared to their natural environment. Techniques associated with feed evaluation will also be covered. Supply of nutrients will be calculated along with assessing the impact of over or under supply and its impact on health and welfare. Construction and analysis of nutrition-based trials will be explained.

One Health

Year of study 2
Code A5022HF
Credits 10
Core/option Core
Module contact [Jane Thomas](#)

Both globally and nationally animals, the environment and humans are increasingly at risk of disease and

impaired health. This multidisciplinary module provides an understanding of the human, animal, plant, environmental interface, enabling a holistic approach to health management (One Health).

Using real-world scenarios and research at the forefront of science you will explore interactions between animal, human, plant and environmental health and assess the effectiveness of the current One Health approach.

Physiology of Body Systems

Year of study 2
Code A5004HF
Credits 20
Core/option Core
Module contact [Jane Thomas](#)

A broad understanding of how animals maintain their bodily functions helps in understanding the production, behaviour, and health of domestic animals. Building on the knowledge gathered in Animal Biology in level 4, this module allows you to further explore the relationship between structure and function of animal body systems at a cellular, molecular, and metabolic level. Understanding body mechanisms and their contribution in maintaining the internal environment and responding to external stimuli will help you to appreciate how an animal functions as a whole organism at various developmental, physiological and production stages. You will gain knowledge on the principles of biotechnology to allow you to assess how scientific advances influence animal physiology in terms of production, health and breeding.

Behaviour and Welfare Science

Year of study 2
Code A5032HF
Credits 20
Core/option Core
Module contact [Dr Ellen Williams](#)

This module will cover two key aspects which are important in managed animals: an understanding of animal behaviour and the science of animal welfare assessment. Throughout this module, you will learn the key principles behind animal behaviour, including how animals perceive and respond to their environments, and understand how behaviour is adapted to enhance animal survival. You will consider how to apply knowledge of animal behaviour in management contexts, covering the principles and methods of quantitative studies of animal behaviour. Knowledge of factors affecting animal behaviour and an understanding of the rationale behind presented behaviour is integral for animal scientists. You will then be introduced to the scientific discipline of animal welfare science, including the ways in which welfare can be assessed in a broad range of species. This module will provide you with a grounding for more specialised modules in the final year of your studies.

Applied Animal Health and Disease

Year of study 2
Code HF
Credits 20
Core/option Core
Module contact [Dr Jayne Powles](#)

An integrated understanding of animal health, welfare and disease is essential for the development of animal management programmes that ensure optimum welfare.

This module is designed to provide you with a detailed knowledge of the factors involved in the aetiology and development of common diseases seen in a range of animal species, and help you build the skills required to develop disease control and prevention strategies.

You will consider how health can influence welfare and how welfare compromises may lead to the development of pathology. You will consider methods of prevention, monitoring and control of health

problems to optimise animal welfare.

Aspects of animal physiology, nutrition, health and general husbandry introduced in earlier modules will form an essential background for this module.

Animal Breeding, Ethics and Genetics

Year of study 2

Credits 20

Core/option Core

Module contact [Dr Jayne Powles](#)

With the rapid developments in animal breeding technologies, an understanding of the processes involved and their application to a range of animal species is required.

This module will provide you with the opportunity to apply the genetic principles underlying animal breeding to a range of animal species. You will develop an understanding of the systems used in a range of animals in the context of the specific requirements and socio-economic environment in which they operate.

In addition, you will consider the relationship between animals and humans in a range of contexts and you will consider the ethical implications of the various roles of animals in society and the ethical considerations involved in the manipulation of animals using biotechnology.

Professional Development for Animal Careers

Year of study 2

Code A5023HF

Credits 10

Core/option Core

Module contact [Jane Thomas](#)

Within this module, you will develop the scientific, personal and transferrable skills required for a career in the animal industry. You will advance your understanding of future career opportunities and learn to identify employers' needs in a changing job market.

This module will introduce you to research and its use within the animal sciences. You will undertake data analysis, presentation and interpretation, whilst exploring how data is used to inform change, innovation and practice in animal industries. You will assess the quality of primary research in the context of study design and data analysis, presentation and interpretation and develop the skills required for analysis and evaluation of published data.

Working in the animal sciences facilitates continuing professional development and an opportunity to enhance and develop your employability potential is paramount for your future career. This module will cultivate readiness for work through personal development planning and reflection, helping you to identify your key strengths and areas for development.

This module builds on key skills developed in Skills for the Animal Scientist (level 4) and both should be considered as continuing professional development within the curriculum.

Placement year

Year of study 3

Core/option Core

Read our dedicated [Placement Learning](#) pages for information on the many benefits of the placement year.

Dissertation

Year of study 4
Code HF
Credits 40
Core/option Core

The dissertation is designed to allow you to develop the skills and personal resilience needed to undertake a sustained, significant and high-quality research project. In conjunction with a supervisor, and in light of detailed course-specific advice, you will select a topic for investigation. You will then plan, execute, report and present your project. The module will draw upon learning from other taught modules, but it also requires a high degree of independent learning.

You will need to apply your learning about the research methods associated with your discipline as you locate data to support your project; you may need to apply methods creatively according to the nature of your research topic. Throughout the module, you will be expected to make choices about the scale and manageability of your work; you will also need to apply good time management skills to ensure success. The project will require you to search for literature related to your topic and to read independently. You must make decisions about the direction of your research, and you will be expected to work proactively to benefit from supervision opportunities.

You will be expected to ensure that each part of your project is ethically sound; this means following protocols but also by developing an ethical mindset which is sensitive to stakeholders and issues arising in the research process. You must also ensure that you attend to issues of health and safety throughout your research.

Evidence Based Sustainable Practice

Year of study 4
Code HF
Credits 20
Core/option Core
Module contact [Dr Jayne Powles](#)

This module examines the evolving role of animal management within a changing environmental, social and ethical landscape. Increasing expectations for high standards of animal welfare require animal professionals to implement evidence-based management practices that support animal needs while addressing sustainability goals, ethical responsibilities, legislative requirements and the practical demands of different animal sectors. This module assesses how sustainable management approaches can support the welfare of animals across a range of species and sectors.

Students will explore how animal needs, natural behaviours, resource availability, environmental impacts and human responsibilities influence decision-making across different animal industries. Through the evaluation of current research, legislation and industry practice, students will develop the skills required to design and justify sustainable management strategies that optimise animal welfare, enhance resilience and support responsible animal use.

Global Challenges in Animal Industries

Year of study 4
Code HF
Credits 20
Core/option Core
Module contact [Dr Jayne Powles](#)

This module addresses the major global challenges to animal industries and evaluates current and novel approaches to managing those threats.

You will appraise the interconnectedness and impact of international and local practices and explore animal industries that are important in different climatic regions of the world.

The module will utilise research at the forefront of science to evaluate the effects of climate change, anthropogenic factors, food supply challenges, and increasing populations on animal health, welfare,

productivity, and management, and to assess how these impacts human health and well-being.

Contemporary Animal Business Project

Year of study 4
Code HF
Credits 20
Core/option Core
Module contact [Jane Thomas](#)

Animal science and management are complex and multi-disciplinary areas of practice. For private companies, charities and government organisation, short-term projects are an important mechanism to achieve desired business changes. The implementation and success of these projects require sound understanding and application of the principles of project management.

This module aims to give students insight into the development and management of projects. It will be delivered through action-based learning where students actively work on live projects for clients, developing proposals and delivering outputs. Students will gain insights into writing project proposals, competing in a competitive process, working with clients and implementing project proposals. They will be encouraged to develop as reflective practitioners in order that they can improve their skills for future practice.

Current Trends in Animal Sciences

Year of study 4
Code HF
Credits 20
Core/option Core
Module contact [Jane Thomas](#)

Scientific advances in animal industries drive improvements in animal health, welfare and management and research is a crucial contributor to advances within animal sciences. This module will provide you with the opportunity to explore recent advances and current trends within the animal science industries relevant to your course, crucial to ensuring you are up to date with the latest scientific knowledge in the field. It will allow you to develop a deeper understanding of current issues and to develop the ability to source, discriminate, evaluate and interpret information from a variety of sources to ensure you are well-equipped for an evidence-based approach in preparation for entering the graduate sector. You will learn to assess the future potential of research to enhance knowledge and understanding whilst also demonstrating an appreciation for the limits of research to overcome challenges within the industry.